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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,709	02/07/2001	Yasuhiro Sugaya	10873.649US01	4174

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EXAMINER

ALCALA, JOSE H

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 09/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/778,709	SUGAYA ET AL.
	Examiner Jose H Alcala	Art Unit 2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____ .
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-124 is/are pending in the application.
- 4a) Of the above claim(s) 12-17 and 22-123 is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-11,18-21 and 124 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____ .
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2-4,7,8</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 12-17 and 22-124 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Claim Objections

2. Claim 1 is objected to because of the following informalities: In lines 9 and 10, it recites: "the convex portions", where it should be: "the convex portion", creating an issue of lack of antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8 and 9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not clear in the claim or the Specification, how can the peel layer be metal plating layer or an Au plating layer, and at the same time: "allow(s) the first metal layer and the second metal layer to be adhered releasably". Therefore, the section of claim 8, reciting that the peel layer is a metal plating layer, and claim 9 have not been treated on art.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21, and 124 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 1, the recitation: "transfer material comprising at least three layers of a first metal layer as a carrier", is unclear regarding if the carrier is composed of three layers, or if there transfer material is comprised of three layers.

Regarding Claim 18, it is not clear if the "circuit component", is a different element from the first metal layer, peel layer or second metal layer, or if it is merely a label for any of those elements or for the combination of them. If it is a different element, newly introduced in that claim, the claim is incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how is the circuit component located with regard to the other elements of the transfer material.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1,5,7,8,11,18,19, and 124 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosenmaki et al. (US Patent No. 6,000,603). As best understood by the examiner:

Regarding Claim 1, Kosenmaki teaches a transfer material (device of Figure 1C) comprising at least three layers of a first metal layer as a carrier (reference number 24), a second metal layer as a wiring pattern (reference number 22), a peel layer (reference number 26) that is sandwiched between the first metal layer and the second metal layer and allows the first metal layer and the second metal layer to be adhered releasably, wherein a convex portion corresponding to the wiring pattern (the top convex portion of reference number 24) is formed on the surface portion of the first metal layer, and the peel layer and the second metal layer are formed on a region of the convex portions (See figure 1C).

Regarding Claim 2, Kosenmaki teaches that each of the first metal layer and the second metal layer comprises at least one metal selected from the group consisting of copper, aluminum, silver, and nickel (see column 4, lines 59,60 and 64).

Regarding Claim 5, the limitation that: "the peel layer comprises a material to be etched with a copper etching liquid", is an intended use limitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

Regarding Claim 7, Kosenmaki teaches teach that a thickness of the peel layer is 1 μm or less (see column 13, lines 65-67).

Regarding Claim 8, Kosenmaki teaches that the peel layer is an organic layer (column 5, lines 5-11).

Regarding Claim 11, Kosenmaki teaches that a thickness of the first metal layer is 4 to 40 μm and a thickness of the second metal layer is 1 to 35 μm . See column 13, lines 61-66).

Regarding Claim 18, the limitation that a circuit component is formed by a printing method for electrically connecting to the second metal layer, is a product by process limitation. If the product in the product-by-process claims are the same as or obvious from a product of the prior art, the claims are unpatentable even though the prior product was made by a different process. See *In re Thorpe*, 227 USPQ 964,966 (Fed.Cir 1985). A "product by process" claim is directed to the product per se, no matter how actually made, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al*, 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding Claim 19, Kosenmaki teaches that the circuit component comprises at least one component selected from the group consisting of an inductor, a capacitor and a resistor (reference number 36, which is a resistor).

Regarding Claim 124, the limitation that the first metal layer, the second metal layer, and the peel layer are made of materials that can be etched by a same etchant, are mere intended use limitations. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. See *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3,4,6, 10,20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kosenmaki et al. (US Patent No. 6,000,603). As best understood by the examiner:

Regarding Claim 3, Kosenmaki fails to explicitly teach that the first metal layer and the second metal layer comprise the same metal component. Kosenmaki teaches that the first metal layer can be made of a metal foil, and that the second metal layer can be made of a metal. It would have been obvious to one of ordinary skill in the art at

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the time the invention was made to modify the teachings of Kosenmaki in order to make both metal layers from a same metal, thus reducing manufacturing costs by using the same base material for both layers. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

Regarding Claim 4, Kosenmaki fails to explicitly teach that the fist metal layer and the second metal layer comprise a copper foil. Kosenmaki teaches that the first metal layer can be made of a metal foil, and that the second metal layer can be made of a metal. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kosenmaki in order to make both metal layers from a copper, thus reducing manufacturing costs by using the same base material with great conduction properties for both layers. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

Regarding Claim 6, Kosenmaki fails to explicitly teach that a height of the convex portion in the first metal layer is 1 to 12 μm . Kosenmaki suggests in Figures 9 and 10, that the height of the convex area is less than 1mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to reduce the dimensions of the elements of the device such as the height of the convex portion of the first metal layer to be 1 to 12 μm , in order to improve integration of electronic devices. In addition, since it has been held that where

the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding Claim 10, Kosenmaki fails to explicitly teach that an adhesive strength between the first metal layer and the second metal layer via the peel layer is 50 N/m or less. Kosenmaki teaches several materials for the adhesive layer, such as thermoplastics, thermosettings or combinations. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Kosenmaki in order to select a material having a sufficient enough adhesive strength of 50 N/m, in order to allow the carrier to be easily released or peeled off from the second metal layer. In addition, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. See *In re Aller*, 105 USPQ 233 and See *In re Leshin*, 125 USPQ 416.

Regarding Claim 20, Kosenmaki teaches many elements that can be part of the circuit component (column 4, lines 56-67, and column 5 lines 1-34), but fails to explicitly teach that the circuit component is formed of a material comprising an inorganic filler and a resin composition. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the circuit component of a material comprising an inorganic filler and a resin composition, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of

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its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

Regarding Claim 21, Kosenmaki fails to explicitly teach that the 21. The transfer material according to claim 18, wherein the circuit component is formed of a material comprising an inorganic filler, an organic binder and a plasticizer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the circuit component of a material comprising an inorganic filler, an organic binder and a plasticizer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. See *In re Leshin*, 125 USPQ 416.

Conclusion

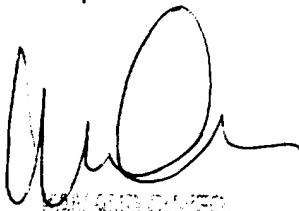
9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach some of the elements of the instant claimed inventions: Shimada et al. (US Patent No. 5,546,375), and Deneau (US Patent No. 4,244,605), Kulesza et al. (US Patent No. 6,138,348), Yasumoto et al. (US Patent No. 4,612,083), Chant (US Patent No. 4,797,508), Bolger (US Patent No. 5,667,884) and Calhoun et al. (US Patent No. 5,141,790).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José H Alcalá whose telephone number is (703) 305-9844. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (703) 308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JHA



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